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NEBC MEETING NEWS

September 1996. Pamela Weatherbee spoke on "Mount Greylock, Haven for the Berkshire Flora." Although it may be the world's smallest mountain, Greylock has a long and interesting history and an unusual flora. The mountain rises abruptly 2800 feet in elevation from the valley floor, resulting in sharp distinctions between vegetation zones and severe summit weather. The geology of Mount Greylock is responsible for much of the diversity of the flora. The hard, resistant and somewhat acidic schists on the summit provide a very different substrate from the calcareous marbles along the mountain's flanks.

After reviewing the history of the mountain, Pam led the Club on an armchair tour of the diverse plant communities on Mount Greylock, starting at the summit where northern species such as *Sorbus decora, Amelanchier bartramiana, Solidago macrophylla, Euphrasia, Streptopus amplexicaulis, Ledum groenlandicum, Betula cordifolia,* and the state's only *Vaccinium vitis-idaea* occur. Boggy areas near the summit support *Milium effusum* and *Gaultheria hispidula.*

In the Northern Hardwoods zone, species include *Platanthera macrophylla, P. grandiflora, P. lacera* and their hybrid, *P.* × *andrewsii,* in addition to more typical herbaceous and shrub species. The rich sugar maple forests on marble support a very diverse herbaceous flora, including wild leeks, *Dicentra, Hepatica, Viola canadensis* and *V. rostrata, Disporum, Caulophyllum, Uvularia grandiflora, Orchis spectabilis, Panax quinquefolius, Hydrophyllum canadense, Conopholis, Botrychium matricariifolium,* and *Camptosorus,* as well as the hairy woodmint.

Steep ravines are a high-disturbance zone, and support *Ribes lacustre, R. triste, Conioselenium chinense,* and *Polystichum braunii* along the cold, rushing brooks. Cliffs provide habitat for *Woodsia glabella, Cryptogramma,* and *Potentilla tridentata.*

September Field Trip. On Saturday, September 14th, 20 NEBC members and guests met at the summit of Mount Greylock, in the fog, to experience the flora described at the Club meeting. Led by Pam Weatherbee, we started with "parking lot" botany at the summit where, accompanied by a cellist, we saw *Sorbus decora* in fruit (and compared it to *S. americana*), *Ame-*

lanchier bartramiana, wind- and ice-shaped balsam firs, and *Euphrasia* in bloom. The sole site of *Vaccinium vitis-idaea* in Massachusetts was observed on the drive to the "boreal forest" zone, where the group was introduced to *Betula cordifolia, Dryopteris campyloptera, Solidago macrophylla, Carex intumescens,* and *Aster acuminatus. Carex gynandra, C. trisperma, Chelona glabra,* and *Nemopanthus mucronatus* in fruit were highlights of a small summit bog, along with two sharp-shinned hawks. A wet glade in the "northern hardwoods" forest lower down the mountain provided *Glyceria melicaria, Carex scabrata, Milium effusum, Laportea, Ribes triste,* and *Cinna latifolia.* The final highlights of the trip were along a steep stream ravine, where we found *Solidago flexicaulis, Ribes lacustre, Caulophyllum thalictroides, Allium tricoccum, Asarum canadense, Phegopteris hexagonoptera,* a two-lined salamander, and (growing together) *Polysticum acrostichoides, P. braunii,* and their hybrid, *P.* × *potteri.*

October 1996. Dr. Thompson Webb III of Brown University spoke on "Vegetational History of New England and Eastern North America: a 20,000 year perspective." The talk was based on a recently published book, *Global Climate since the Last Glacial Maximum,* produced by the Cooperative Holocene Mapping Group and edited by Herb Wright. The book integrates vegetation data derived from pollen analyses with climatic data from lake levels to produce computer simulations of climate that are useful both in documenting the past and providing a test for predictive climate models.

Pollen analyses have some severe limitations for understanding vegetation. Since these are based on anemophilous species, pollen records show only a small portion of the flora and may represent species from several plant communities. Recent work has shown that the relative abundance of tree species and pollen deposition correlate best at the continental scale, where climate is the most important factor controlling plant distribution. A quick overview of the history of New England flora shows that spruce and pine dominated the vegetation before about 9000 years ago, with oak and pine more recent dominants. Ragweed pollen appeared following the European colonization and land clearing, and is probably the first source of New World air pollution.

Pollen data show that plant associations were very different at past times than we know them today, and that distributions have

changed substantially. Spruce/fir forests, for example, have occurred only recently. Following the last glaciation, species did not simply migrate south and north in response to the advancing and retreating glaciers, but individually responded to changes in climate. Some species were rare everywhere at the glacial maximum but increased in abundance after glaciation, spreading along the glacial front.

Dr. Webb concluded the presentation with dynamic representations of the change in plant distributions over time, using a video film of a computer 3-dimensional model.

November 1996. The Centennial Banquet was held at the Harvard Faculty Club with 85 members and guests present, including six who had been members for over 50 years.

Dr. Richard Howard, a member since 1940, spoke on "An Illustrated History of the New England Botanical Club." Former Director of the Arnold Arboretum and Science Director at the New York Botanical Garden, as well as Past President of the NEBC, Dr. Howard was the featured speaker at the 700th and 800th meetings of the Club and holds the record for speaking at commemorative Club milestones. Dr. Howard provided an overview of the environment in which the Club emerged. Many of the extant scientific organizations have their roots in this period, including the American Philosophical Society, AAAS, the Massachusetts Horticultural Society, and the Massachusetts Audubon Society. The NEBC is unusual in that it has operated for a century without a change in name or organization.

Key prior organizations included the Linnaean Society of New England, which became the Boston Museum of Natural History and eventually was re-established as the Museum of Science. Natural history societies were founded in several locations, including the Essex County Natural History Society which merged with the Essex Institute, and later became the Peabody-Essex Museum. Others included the Agassiz Association, which began in Lenox and comprised 20,000 members worldwide at its peak but expelled members who failed to supply exchange specimens, the Cambridge Science Club, the Torrey Botanical Club (the oldest botanical club), the Connecticut Valley Botanical Society, the American Botanical Club (now the Botanical Society of America), and the Josselyn Botanical Society, founded in 1895 with Kate Furbish as Vice President. This was an era of intense interest

in the local flora. Mary Day, the legendary Gray Herbarium librarian, identified 61 private herbaria in New England in the early 1900s, and Robinson cited 365 individual local floras in his edition of *Gray's Manual.*

The New England Botanical Club was founded a year later, in 1896. The Club's founders, particularly George Goodale, had all been involved in other local scientific clubs and organizations. The goals of the founders were to organize a club to study the New England and alpine flora. The name of the Club's journal, *Rhodora,* was deliberately chosen to correspond with the goal of studying the flora in the natural range of *Rhododendron canadense.* Dr. Howard provided brief sketches of each of the Club's founding members. Among these gentlemen were: J. R. Churchill, a judge and banker; W. G. Farlow, to whom we owe the current old herbarium building (he left his collection to Harvard on the condition that it be moved to a fireproof building); C. E. Faxon, who drew the plates for Sargent's *Silva of North America,* despite his training as an engineer; G. L. Goodale, who was a highly successful fundraiser and apparently tireless teacher; E. L. Rand, who focused on Mt. Desert; C. S. Sargent, who served as Director of the Arnold Arboretum for 54 years; R. Thaxter, the first Club President to offer travel talks; and B. M. Watson, credited with introducing the Japanese honeysuckle.

Dr. Howard concluded with an eclectic list of NEBC trivia and doggerel, to the appreciation and amusement of those present.

December 1996. Dr. David Barrington of the University of Vermont concluded the Centennial Year presentations with a talk entitled "What We Don't Know About the New England Flora and Why We Want To Know It." Some of the major unknown areas of the New England flora are those that first interested the founders of the Club—disjunctions in distributions and the origins of the flora. Using examples from research in his lab, Dave showed how modern techniques are expanding our knowledge of the evolution of New England taxa through both reticulate and divergent evolution, resolving old taxonomic problems and shedding light on evolutionary origins.

Examples that Dave discussed include the tetraploid/diploid complex within *Asplenium trichomanes,* the two allotetraploids *Cystopteris tenuis* and *C. fragilis,* the serpentine endemic allotetraploid within the *Adiantum pedatum* complex, the as-yet unre-

solved relationships within the *Diphasiastrum complanatum/digitatum* complex, and the evolution of genetically distinct groups within the *Ammophila breviligulata* complex. In each of these cases the application of new theories of systematics and new and powerful molecular tools has, in combination with detailed morphological studies, allowed us to understand the evolutionary relationships and history of the taxa in the New England flora. In several instances, however, this has created problems for the conservation of biological diversity, when science recognizes taxa that are evolutionarily distinct but morphologically cryptic.

—Lisa A. Standley, Recording Secretary.